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A Triarchic Approach to Writing Instruction

A Paper

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by

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Chapter I: Introduction and Statement of the Problem

The National Commission on Writing in American's Schools and Colleges painted a dismal picture of the deficiency of fundamental writing skills exhibited by American's youth in the most recent report entitled "*The Neglected R.*" This report along with the *No Child Left Behind Act* has been the catalyst of a renewed emphasis upon writing in all content areas of elementary and secondary education. For the secondary English teacher, the fact that students are exhibiting poor writing skills is not at all shocking.

The task of teaching fundamental writing skills as they pertain to expository writing is truly daunting, and no one understands this better than the English teachers. Difficult as it may be, teaching expository writing is no longer an option but a *must*. Furthermore, in order for every student to acquire the fundamentals of expository writing before exiting high school, educators may need to restructure their current teaching practices to meet the needs of every student, including those that don't respond to conventional methods of instruction.

At the heart of modern instructional methodology theory is the idea that individual students should be central to the constructing and framing of curriculum and instruction, rather than the opposite, more traditional approach which places curriculum and instruction at the center of the learning process rather than the student. Among the many modern theorists is Yale University professor Dr. Robert Sternberg. Sternberg asserts that instructional approaches that consider an individual's intelligence preference are most beneficial and yield higher success rates. Defying the traditional, rigid view of intelligence that bases intelligence on the analytic/memory-based facet of intelligence,

Sternberg redefines intelligence to incorporate three facets of intelligence which he terms creative, practical, and analytical intelligences. This theory of human intelligence is commonly referred to as the *triarchic theory of human intelligence.*

The purpose of this study was to investigate the effects of applying Sternberg's triarchic theory of intelligence to expository writing prompts. More specifically, this study was conducted to evaluate the effects of the implementation of triarchic instruction upon students' fundamental content composition features (elaboration, focus and support, organization). The null hypothesis for this investigation is:

The use of triarchic writing prompts has no effect upon students' levels of mastery of fundamental composition features.

As it applies to this study, expository writing is defined as writing that is, "...intended to expose or reveal its subject through facts, reason, and argument... [and] typically takes the form of an essay" (http://web.ics.purdue.edu/~conreys/101files/Otherfolders/Glossary.html). Students exhibit effective expository writing when they adhere to fundamental composition features such as elaboration, focus and support, and organization.

Chapter Two: Literature Review

According to the National Commission on Writing, America's students of all levels are exhibiting poor writing skills. Calling for a nationwide reform, the commission asserts that, "American education will never realize its potential as an engine of opportunity and economic growth until a writing revolution puts language and communication in their proper place in the classroom. Writing is how students connect the dots in their knowledge. Although many models of effective ways to teach writing exist, both the teaching and practice of writing are increasingly shortchanged throughout the school and college years. Writing, always time-consuming for student and teacher, is today hard-pressed in the American classroom. Of the three 'Rs,' writing is clearly the most neglected" (www.writingcommission.org/report.html).

Perhaps even more telling than the commission's report are the testimonies of frustrated college professors who frequently encounter students with deficient writing skills. Fisk University admissions dean, Edwina Harris Hamby, states that, "Overall the quality of freshman students' writing is less than that of students entering college 15 or more years ago. Here at Fisk, we require a 500 word essay as part of the application process, and about a quarter of the applicants submit essays that are not well-written." Other professors postulate that the cause of this decline is the overemphasis of standardized testing and the under emphasis of the composition. Princeton University Admissions Dean, Fred Hargadon, states that, "...in an environment in secondary education that is more and more test-score driven, mastering the art of filling in the right bubbles on standardized tests means less emphasis, by students and teachers alike, on writing" (www.writing commission.org/report.html).

Ultimately, the burden of writing instruction falls on the shoulders of secondary English teachers. Despite the fact that many students entering high school are functioning at low literacy levels, teachers must employ effective writing strategies. Many effective writing strategies exist (as the commission's report so clearly states), but which model of writing instruction is the best fit for our students?

In the past, writing instruction has placed teachers at the center of the writing process and students as dutiful followers of instruction. This paradigm is not only burdensome to teachers and students but ineffective as well. This paradigm has produced writers who need continuous structure and explicit instruction rather than independent writers who produce high quality compositions in various genres. The traditional paradigm must be turned upside down and shift from teacher-centered to student-centered. In the instructional writing process, the teacher's role must become less central and involve the tasks of reader and trainer; conversely, the student's role must become more central and involve the tasks of collaborator, editor, and proofreader (Damashek 2003).

With this paradigm shift in mind, secondary writing instructors must closely inspect the type of learner they are instructing so as to employ best teaching practices. This close inspection involves understanding the individual cognitive constructs (intelligence preferences) of learners.

Modern Intelligence Theory

Howard Gardner, a Harvard professor and researcher of intelligence, defines intellectual competence as, "entailing a set of skills of problem solving - enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an

effective product - and must also entail the potential for finding or creating problems - thereby laying the groundwork for the acquisition of new knowledge" (Gardner 1983). In his book *Frames of Mind: The Theory of Multiple Intelligences,* Gardner proposed that individuals acquire knowledge through one or a combination of different eight channels. Prior to Gardner's revolutionary assertion, educators accepted the idea that general intelligence consisted of two facets – linguistic and mathematical intelligence.

Two essential ideas emerge from Gardner's proposal of multiple intelligences. First, individuals acquire knowledge in more than one mode. Second, optimal learning occurs when an individual encounters new ideas in his or her preferred intelligence. Gardner appropriately refers to this learning phenomenon as "matching." Although matching an individual's preferred intelligence to a learning strategy may seem daunting to teachers, the matching system, "... should help ensure that a student can rapidly and smoothly master what needs to be mastered, and thus be freed to proceed further along both optional and optimal paths of development" (1983). Gardner's proposal of multiple intelligences implies that teachers have an obligation to attend to the biological, psychological, and historical/cultural tendencies of students. In other words, for learning to be "all that it can be" teachers must attend to individual differences.

Keeping within this same line of thought, Robert Sternberg, Yale psychology professor and contemporary of Gardner, suggests that individuals acquire knowledge through one or more modes. His work further narrows human intelligence operations into three sub-categories, which he termed the contextual, componential, and experiential. This theory is commonly referred to as the *triarchic intelligence theory.*

The Triarchic Theory of Human Intelligence

Sternberg likened the human intelligence construct to the established forms of government and asserted that these external parallels are not merely coincidental but that they are extensions of the human mind and its operations. In keeping with this metaphor, which likened the mind to the functions of government, Sternberg redefined these facets of thinking as executive, legislative, and judicial. Each "branch" represents a different way of thinking or operating mode (Sternberg 1997).

Students with *legislative* learning tendencies are those that prefer to operate on their own terms, preferring to create innovative plans, rather than implement plans and procedures. At times, the legislative learner (also known as the *creative* learner) is resistant to follow guidelines and demands to know why he cannot devise or create his own plan or approach to a situation (Sternberg 1997).

Students with *executive* learning tendencies are those that prefer to implement plans rather than create plans. Generally speaking, these learners like structure and feel comfortable following existing guidelines. These learners are described as being *very practical* in their approach to learning and typically are happy to follow and enforce rules and guidelines rather than create rules like the legislative learner (Sternberg 1997).

The judicial (or *analytical)* learner has the tendency to inspect, analyze, and critique existing ideas and institutions. Rather than implement plans, the judicial learner prefers to critique and is delighted to have the opportunity to evaluate the effectiveness of an established entity (Sternberg 1997).

The Creative Learner and Writing Performance

According to Sternberg's theory, creative learners are defined as those who, "... buy low and sell high in the world of ideas. They generate ideas that are unpopular and often disparaged; they convince people of the worth of these ideas; and then they move on to other new and unpopular ideas" (1995). These creative learners may initially have a difficult time conforming to traditional standards of writing. They may experience discouragement ultimately hindering optimal performance if their ideas and writing approaches are continually viewed as backward and inconsistent with widely accepted, more traditional views. Because of this potential threat, it is imperative that teachers consider the creative learners' tendencies and personality, as well as provide a conducive environment that supports the individual's learning style.

In order to understand how to teach the creative learner, teachers must understand a little bit about the facets that comprise their personality. Sternberg identifies five traits of the creative thinker's personality – tolerance of ambiguity, perseverance, willingness to grow, willingness to take risks, and willingness to stick to convictions despite popular belief. The first trait, tolerance of ambiguity, simply means that the learner is willing to tolerate disparate pieces of information. If the individual feels as though he/she cannot deal with disparate pieces of information for a season, he may "shut down" prematurely, thus denying himself the opportunity for success. Perseverance, the second trait, is closely linked with tolerance. The learner must commit himself to the task at hand without despairing at initial failure. If innovative approaches do not initially yield gains, the learner must have the ability to persevere. Thirdly, the learner must be willing to grow, to extend himself beyond personal bounds, beliefs, and

knowledge. Fourthly, the learner must be willing to take risks, which involves moving out of one's comfort zone and opening up to possible failures. Fifthly, the creative learner must stick to his convictions. If outsiders perceive their ideas as deviant, he must be able to tolerate possible isolation. These five aspects of personality are essential to high levels of creative performance.

While consideration of the creative thinker's personality is important, it is equally important to consider that optimal performance is closely linked to a conducive working environment. In situations where conformity is encouraged, legislative thinkers may feel stifled, bound to a set of regulations or standards. On the other hand, if the legislative thinker is immersed in an accepting environment, chances for success are high (Sternberg 1995). Furthermore, Graham and Harris noted that if the classroom is viewed as punitive or unfriendly, where students' writing difficulties are overemphasized, students may focus more on their limitations rather than their chances of success (1994). Writing instructors must be conscious of these creative learners who tend to redefine ideas and look at ideas or problems from novel, less-accepted viewpoints.

A second necessary resource for creative learners' optimal performance is the application of particular intellectual styles (learning styles). The creative individual who approaches given tasks with creative styles will more than likely experience success. These creative styles are included in the triarchic theory and are defined as liberal/conservative and global/local thinkers. Put briefly, liberal thinkers are those who prefer new, innovative methods of accomplishing a task; conservative thinkers are those who prefer to use "tried and true" methods. Global thinkers are those who prefer to view tasks in a large/global context, whereas local thinkers tend to see the minutia of tasks and

are often overly concerned with details (Sternberg). Sternberg has found that legislative learners who engage their global and liberal styles will positively contribute to creative performance.

When the creative/legislative thinker has the opportunity to work in an accepting environment where a creative learning style is accommodated, chances for productivity are likely.

Practical Thinkers and Writing Performance

Practical intelligence has been defined as the, "...ability to find a more optimal fit between the individual and the demands of the environment through adapting to the environment, shaping or changing it, or selecting a new environment in the pursuit of personally valued goals. It can be characterized as 'street smarts' or 'common sense', and it supplements academic intelligence or 'book smarts' " (Sternberg and Grigorenko 2001). In their study of practical intelligence, Sternberg and Grigorenko found that tacit knowledge (knowledge that is gained through personal experience) is foundational to practical intelligence and is characterized by three features.

First, gaining tacit knowledge does not necessitate a support system (Sternberg and Grigorenko). In a typical classroom setting, the instructor and/or school system provides a great amount of support in order for students to retain academic knowledge. For example, assigning homework for the purpose of reinforcing new ideas and fostering familiarity with new concepts is one such support system used in gaining academic knowledge. However, because tacit knowledge is primarily gained through meaningful personal experience, this type of support system is not needed to gain tacit knowledge.

Second, tacit knowledge is basically procedural knowledge about how to act in particular situations. Drawing upon J. R. Anderson's research on procedural knowledge, Sternberg and Grigorenko conclude that, "When the tacit knowledge of an individual is revealed, generally through extensive probing of general action statements or rules, it often is expressed in the form of complex, multi-condition rules (production systems) for pursuing goals (rules about how to judge accurately for a variety of purposes and under a variety of circumstances)" (2201). For example, if a high school student is questioned about why she confronted her best friend's boyfriend in a combative manner, she may respond with a very confusing explanation that includes a lot of *ands, ifs, becauses,* and *sos,* thus revealing her knowledge of how to act (procedure) in a particular situation (multi-conditional).

The third feature of tacit knowledge is that it has practical value (Sternberg and Grigorenko). In other words, it's "user friendly." An individual who is applying tacit knowledge is not relying upon what others have deemed appropriate; rather, he or she is relying upon what is useful for the situation at hand. If operating on tacit knowledge, the individual may abandon appropriate actions if the appropriate actions do not match personal goals in a given situation. *Appropriateness* may be replaced with *effectiveness.*

Given these three features of tacit knowledge, one may conclude that practical intelligence does not seem to *fit* into a traditional classroom where academic/book knowledge is rigorously pursued and highly valued; however, many educators suggest that practical learners can be successful, especially in writing where one's experiences are crucial to shaping written text. Graham and Harris assert that writing, "....is best learned through real use in meaningful and authentic contexts" (1997). Because practical

learners operate on previous experiences, new information must be presented in familiar context that resemble previous experience. If allowed to work within existing frameworks, individuals operating on practical intelligence will most likely be successful in the classroom.

The implications for writing instruction are certainly noteworthy. If writing instructors provide practical learners with the opportunity to apply tacit knowledge and work within familiar contexts in their writing, it seems likely that success will follow. Conversely, if writing instructors do not provide practical learners with the opportunity to apply tacit knowledge and work within familiar contexts in their writing, it seems likely that success will not follow.

Analytical Thinkers and Writing Performance

Analytical thinking skills have been defined as, "the ability to judge, evaluate, problem solve, compare and contrast, critique, explain, and examine existing constructs" (Sternberg). Analytical thinkers are those who do well in traditional school settings and are often categorized as the "book smart" students. Because they tend to be able to memorize facts particularly well, analytical thinkers are able to draw upon a broad knowledge base when asked to evaluate, problem solve, compare and contrast, etc. The term "critical thinking" has in latter years become synonymous with this facet of intelligence. (Thomas, Thorne, and Small 2000). Because the underlying operational structure of critical/analytical thinkers is memory, educators would do well to consider the various operations of memory and how these operations connect to students' learning.

Although the study of memory is indeed a very complex undertaking, it is necessary for educators to understand the basic functions of memory. The most basic

functions of memory involve the processes of encoding, storing, and retrieving. The first function of memory is the *encoding* process. Put simply, this process requires the individual to chunk, code, and/or apply labels to incoming information. The incoming information is obtained through a modality or sensory system (visual, kinesthetic, and auditory channels) and then labeled or coded. A second function of the memory is the *storing* process. Once new information has been encoded, the individual then stores the information into meaningful categories, which are continually expanding if the individual is successfully storing new information. The third function of memory is *information retrieval*. This occurs when an individual is able to extrapolate knowledge that has been stored in the long term memory. These three functions of memory are closely linked to a student's ability to participate in analytical task (Thorne).

Strongly analytical students show favorable signs of healthily operating memory. However, for some students (especially those with attention deficit disorders), critical thinking is a most arduous task, especially if the required form of expression must be written. In regards to this struggle, Thorne states that, "...students who have trouble with recalling rules, especially those in written language, may perform adequately when writing single sentences. However, when they are required to write paragraph or story length text, their performance deteriorates." The absence of the ability to encode, store, and retrieve information greatly affects the student's ability to communicate effectively through written expression.

Triarchic Intelligence and Current Best Practice Writing Instruction

Given that classrooms are composed of various learners with varying learning abilities and deficiencies, it seems logical that utilizing Sternberg's instructional approach, which allows developing writers to capitalize on their strengths, would yield favorable results. Current research on writing instruction appears to support this theory.

Provide Opportunities. One of the foundational principals of the triarchic theory is that students can learn if given the opportunity to learn according to his or her preferred intelligence preference. Sternberg suggests that teaching triarchically, "enables students to encode the information to be learned in three different ways (analytically, creatively, and practically), as well as for memory. The multiple encodings of information should improve learning." (Sternberg and Grigorenko 1998). This allowance for students to encode new information in a preferred manner is in itself creating opportunity for success. However, as it pertains to writing instruction, teachers can further create opportunities for their students by providing them with authentic writing tasks and ample time to write in and outside of class.

One of the primary means of creating opportunity is to ensure that writing tasks are authentic and meaningful. Kern suggests that providing students with a meaningful writing context often begins with an engaging piece of literature (2003). Reading an engaging story often sparks thoughts or questions about the relationship between the individual and the world around him/her. The story coupled with classroom discussion provides an opportunity for meaningful writing. Barton further suggests that, "…such discussions are characterized by a supportive atmosphere, explicit instructional language, and the encouragement of reader and text connections and critical thinking "(as quoted in Kern 2003). Thus, coupling an interesting

piece of literature with supportive, focused discussion provides a meaningful context in which students can write.

A second means of creating opportunity for developing writers is to ensure ample time to write. The National Council of Teachers of English asserts that students learn to write by frequently engaging in the writing process. The council further suggests that, "…merely listening to lectures about writing" is not enough to develop students' writing expression. This is not to say that direct instruction is not beneficial to the development of writers but that student's engagement in the writing process is the best means of developing their written expression. In regards to the frequency or writing, the council suggests that, "The more people write, the easier it gets and the more they are motivated to do it. Writers who write a lot learn more about the process because they have had more experience inside it….the improvement is built into the experience of writing" (2004). Furthermore, in their educator's guide, the Saskatchewan diversity committee suggests that providing support for all writers requires that teachers, "Give students the opportunity to write on a daily basis. The only way one can improve his or her writing is to write often with the guidance of a teacher or support personnel" (2004). The instructional advice offered by these two authoritative councils suggests that the act of writing is to be central in writing instruction. In order for the act of writing to remain central in writing curriculum, teachers must carve out ample time, thus providing students with the opportunity to improve their writing skills.

Create a Supportive Environment. A second principle that emerges from Sternberg's triarchic theory is that teachers should strive to create a supportive learning environment where all students feel that their personal expressions are welcome. In his research on creative learning tendencies, Sternberg found that a major contributing component for a creative thinker's

success was working in a favorable, nurturing environment where novel ideas and approaches were not discouraged or disparaged (1995). Other educators confirm this theory, attesting to the necessity of a teacher who purposefully creates a supportive environment where writers feel comfortable making mistakes. Romano states that if students are to feel comfortable, then teachers must, "…create the kind of classroom atmosphere where students feel free to express themselves – where both error and accomplishment are natural, expected parts of learning. Student must be comfortable taking risks with language, genre, and topic choice because they know that everyone else in the class is ready to be amazed at their linguistic creativity" (2004). Creating such an environment takes time and the ability of the teacher to accurately assess the growth and ever-changing needs of the students.

Vary Instructional Methods. Because teachers must accommodate an array of thinking styles, it is necessary to vary instructional methods and materials to suit the needs of students. Sternberg suggests that educators must, "… systematically varying teaching and assessment methods to reach every student. The key is variety and flexibility – using the full range of styles available to you…the solution is not to replace traditional teaching and assessment methods with modern methods….by changing from one to another [traditional and modern methods], you'll merely benefit a different group of children. Again, the key is to vary your approach" (1994). Graham and Harris, who have conducted extensive research in the field of writing instruction, verify that this "variety approach" is the one of the most effective approaches to writing instruction (1997).

The three aforementioned triachic principles are indeed noteworthy. At the heart of these principles is the need of the individual learner. Attending to the needs of individual learners necessitates that writing teachers assess needs prior to instruction and then construct

instruction and prompts according to the varying needs and abilities of the learners. Such an approach is worth further investigation.

Chapter Three: Design and Methodology

Because of the renewed emphasis upon writing instruction, English teachers have to rethink their current methods of writing instruction. Students are attending college with minimal abilities to meet writing standards; consequently, professors are frustrated and speaking out. Many instructional methods are worthy of attention but recent studies show that direct instruction is not the most effective strategy to use with developing writers. Studies suggest rather that student writing develops at a faster more productive rate when they are fully engaged in the writing process. The teacher takes the role of a guide, instructing individually as needs arise. This student-centered method of writing instruction has gained recent attention and has caused educational psychologists to investigate the nature of intelligence. The idea is that if teachers should attend to the individual needs of students, then teachers should understand the way that students think. There are several theories about the nature of intelligence, but Sternberg proposed that one's intelligence is comprised of three facets: analytical, practical, and creative. This theory of intelligence is called the triarchic theory. Unlike earlier theories of intelligence which suggest that intelligence is rooted in one's ability to apply analytical skills, the triarchic theory suggests that intelligence is rooted the ability to apply creative, practical, and analytical skills. Furthermore, Sternberg suggests that individuals exhibit a natural proclivity toward one of the three intelligences, and he termed this as one's "intelligence preference." This idea, if applied to writing instruction, may enhance student's ability to gain and retain understanding of writing, specifically the essential features of writing. If the writing teacher utilizes writing prompts that match the students' intelligence preferences and then acts as a guide throughout the writing process, students' chances of

success should be high being that the material was presented to them in an understandable way. This particular investigation is focused upon the outcome of utilizing triarchically developed writing prompts in a high school classroom.

Participants. The participants in this study were thirty-six ninth grade English students who attend a school located in a rural community in central Virginia. The high school is relatively small with a population of appropriately 1, 500 students. In 1994, the high school received a fully accredited status and was no longer under review for improvement, meeting AYP status. 92% of juniors passed the end of course Standards of Learning English Test in 2004.

Since this study was focused upon ninth grade students, it was necessary to include the status of passing/failing eighth grade students from the two middle schools for the previous year. The 2004 results of the English Standards of Learning Assessment showed that only 72% of students from one middle school passed the test (school didn't receive AYP status), while 85% of students from the other middle school passed the test (school did receive AYP status). Thus, these results revealed that on average 22% of rising ninth grade students struggled with literacy.

Of the forty four students participating in this study, twenty one were members of a fifth period class that met at 12:10 following a lunch break; the remaining twenty-three participants were members of a sixth period class that met at 12: 55. Both groups were enrolled in on-level English classes structured to meet the needs of the *average* ninth grade student.

Design and Methodology. Because students' awareness could have confounded the results of this investigation, they were not told that they were participants of the

study. During the time that this study was in progress, students participated in normal class activities, which included the following: readings of Romeo and Juliet, literature discussions, and formal and informal written responses to the literature.

Six weeks prior (January 23, 2006) to the implementation of the treatment, students' intelligence preferences were measured using an adaptation of the STAT (Sternberg Triarchic Abilities Test) profile measurement. This measurement determines students' intelligence preferences in terms of the creative, practical, and analytical facets of intelligence and has been used in similar studies.

Phase One: Responding to a Traditional Essay Prompt

Day One: Students were able to choose between two writing prompts, both of which required them to use analytical thinking. Following the reading and discussion of Act I, students responded to one of the following prompts: 1) *In the opening act of Romeo and Juliet the audience is introduced to the character of Benvolio, the cousin and good friend of Romeo. It is he who tries to get Romeo out of his depressed state of mind. Benvolio insists that he will help even if Romeo doesn't want his help. Some people would say that this is a characteristic of a good friend. In your judgment, what characteristics are essential in a good friend? Think about the friendships that you see developing in the play as well as your own friendships. Write an essay in which you explain what qualities a good friend possesses.* 2) *In the opening act of Romeo and Juliet the audience is introduced to two families, the Capulets and the Montagues. Although we are not told why these families are fighting, we are told that they refuse to make things right, preferring to remain angry with each other at any cost. What causes people to remain bitter and angry? Think about the anger shown in the play as well as your own*

knowledge and experiences. Write an essay in which you analyze the causes of longstanding bitterness and anger. Before writing, students briefly discussed the prompts in a class brainstorming session, and the teacher directed the students' attention to the editing checklist included on the prompt. The brainstorming sheets were provided for students to organize their thoughts; they were given the option of utilizing the brainstorming sheet or creating their own. The students spent the remainder of class time brainstorming and organizing ideas.

Day Two: Students began drafting their essays. During this time, the teacher answered individual questions and monitored the progress of all students. At the end of class, students were informed that they were to finish their first draft and edit it according to the checklist included on the writing prompt.

Day Three: Students made final revisions and began writing draft two. They were informed that the essay had to be completed by the end of the period.

Phase Two: Implementation of Sternberg Writing Prompts

During this phase of the investigations, students continued to read Romeo *and Juliet* and participate in class discussion. Following the reading of Act III, students were informed that they would be writing an essay. This time, however, the prompts were designed triarchically to match the students' individual learning preferences.

Day One: The teacher distributed the differentiated prompts and introducing the writing assignment. Students were able to choose between two prompts, but each prompt was designed to match their individual intelligence preference. Analytical students responded to one of the following prompts: 1)*In the beginning of Act III, the audience observes a deadly encounter between the Capulets and the Montagues. Despite what the*

Prince decreed, the two families continue to fight. At the end of this act, the audience observes Juliet refusing to comply with her parents' wishes. Despite her parents' wishes, Juliet determines that she will not marry Paris. Both of these situations involve the refusal of people to submit to authority. Why do people often refuse to submit to authority, whether they are federal authorities or local authorities (school and home)? Think about the situations in the play as well as your own knowledge and experience. Write an essay in which you analyze why people have a problem submitting to authority. 2) At the end of Act II, Romeo and Juliet make a quick decision to marry despite the problems that they may encounter from their respective families. At the beginning of Act III, Romeo kills Tybalt. Both of these actions were the result of passion, which is defined as, "...an intense, driving, or overmastering feeling." Write an essay in which you compare and contrast the benefits and costs of being motivated by passion. Think about the passion shown by the characters in the play as well as your own understanding of passion. Practical Students responded to one of the following prompts: 1) *In the beginning of Act III, the audience observes a deadly encounter between the Capulets and the Montagues. Despite what the Prince decreed, the two families continue to fight. At the end of this act, the audience observes Juliet refusing to comply with her parents' wishes. Despite her parents' wishes, Juliet determines that she will not marry Paris. Both of these situations involve the refusal of people to submit to authority. Write an essay in which you describe the type of person that refuses to obey authority. Think about the characters in the play as well as people you know.* 2) *At the end of Act II, Romeo and Juliet make a quick decision to marry despite the problems that they may encounter from their respective families. At the beginning of Act III, Romeo kills Tybalt. Both of these actions*

were the result of passion, which is defined as, "...an intense, driving, or overmastering feeling." Write an essay in which you describe the type of person that is motivated by passion. Think about the characters in the play as well as people you know that are controlled by their passions. Creative students responded to one of the following prompts: 1) *In the beginning of Act III, the audience observes a deadly encounter between the Capulets and the Montagues. Despite what the Prince decreed, the two families continue to fight. At the end of this act, the audience observes Juliet refusing to comply with her parents' wishes. Despite her parents' wishes, Juliet determines that she will not marry Paris. Both of these situations involve the refusal of people to submit to authority. Imagine a perfect world. How would people react to authority? How might the authorities act? Write an essay in which you explore the relationship between an ideal world and people's actions toward authority.* 2) *At the end of Act II, Romeo and Juliet make a quick decision to marry despite the problems that they may encounter from their respective families. At the beginning of Act III, Romeo kills Tybalt. Both of these actions were the result of passion, which is defined as, "...an intense, driving, or overmastering feeling." If you were one of the characters in the play, how would you have reacted to what was going on around you? Would passion overcome your sense of reason? In an essay explain how you would have acted if you had been in the same situation.*

After students reviewed the topic choices, the teacher instructed them to begin brainstorming. Again, students were able to use a graphic organizer provided by the teacher or create one of their own. As students began brainstorming and organizing their essays, the teacher answered questions and instructed as necessary. Students were encouraged to use the editing checklist included on the writing prompt.

Day Two: Students continued organizing and composing their essays, and the teacher continued to instruct individuals as necessary. At the end of class, students were told to complete the essay for homework if they didn't finish.

Day Three: Students edited, composed a final essay, and submitted their work.

Scoring

Because the fundamental writing components of elaboration/support, organization, and focus are weaknesses in student writing, the North Carolina state scoring rubric was the instrument used to score the essays. It is designed to assess the afore mentioned components but also assesses students' abilities to maintain coherency, topic clarity, sentence fluency, and appropriate word choice. Since these components were not pertinent to this study, they were not included.

Chapter Four: Findings

The purpose of this study was to investigate the effects of implementing Sternberg's triarchic theory of intelligence to expository writing instruction. Specifically, this study was conducted to evaluate the effects of triarchically designed writing prompts on students' performance on fundamental content composition features (elaboration, organization, and focus). Phase one of the study involved the measurement of students' writing performance on a traditional analytical writing prompt. Phase two of the study involved the measurement of students' writing performance on a triarchically differentiated writing prompt. Following phase two, essays were scored using North Carolina's end of course writing test rubric. The data revealed no significant findings in regards to students' abilities to elaborate and organize their essays; however, the data revealed significant findings in regards to students' abilities to establish and maintain focus throughout their essays.

Writing feature: elaboration/support. The data revealed that the implementation of triarchically designed writing prompt had no significant impact upon students' abilities to elaborate/support their thoughts in an expository essay. With the level of significance set at .05, the outcome would have had to be less than .325. In this case the data revealed an insignificant finding at .360.

A closer look at the data revealed that the differentiated prompt benefited some participants. Seven students improved with the differentiated prompt; six students improved by one point, and one student improved by two points. Three students were identified as creative thinkers; three students were identified as practical thinkers; and

one student identified as an analytical thinker. Sixteen students maintained their original score.

Values	X_a	X_b	X_a - X_b
n	36	36	36
sum	95	90	5
mean	2.6389	2.5	0.1389
sum_sq	267	238	29
SS	16.3056	13	28.3056
variance	0.4659	0.3714	0.8087
st. dev.	0.6825	0.6094	0.8993

Variances and standard deviations are calculated with denominator = n-1.

$Mean_A$ - $Mean_B$	t	df
0.1389	0.93	35

P	one-tailed	0.1802075
	two-tailed	0.360415

Writing feature: organization. The data revealed that the implementation of triarchically designed writing prompt had no significant impact upon students' abilities to organize their thoughts in an expository essay. With the level of significance set at .05, the outcome would have had to be less than .325. In this case the data revealed an insignificant finding at .711.

A closer look at individual scores revealed that eleven students made significant gains on their scores. Of these eleven participants, six students gained one point, four

students gained two points, and one student gained three points. These participants were either creative or practical thinkers.

Values	X_a	X_b	X_a - X_b
n	36	36	36
sum	96	93	3
mean	2.6667	2.5833	0.0833
sum_sq	304	269	63
SS	48	28.75	62.75
variance	1.3714	0.8214	1.7929
st. dev.	1.1711	0.9063	1.339

$Mean_A$ - $Mean_B$	t	df
0.0833	0.37	35

P	one-tailed	0.3555995
	two-tailed	0.711199

Writing feature: focus. The data revealed that the implementation of triarchically designed writing prompt significantly impacted students' abilities to establish and maintain focus throughout an expository essay. Again, the level of significance was set at .05, and the outcome was certainly significant at .0001. However, the impact was negative, revealing that many students struggled to establish and maintain focus when responding to a differentiated prompt.

Of the thirty-six participants, only three students showed significant gains in this area; two of these participants were creative thinkers, and the other participant was a practical thinker. In these cases, the differentiated prompt aided students' abilities to establish and maintain focus throughout the essay.

Values	X_a	X_b	X_a - X_b
n	36	36	36
sum	122	90	32
mean	3.3889	2.5	0.8889
sum_sq	446	252	66
SS	32.5556	27	37.5556
variance	0.9302	0.7714	1.073
st. dev.	0.9644	0.8783	1.0359

Variances and standard deviations are calculated with denominator = n-1.

$Mean_A$ - $Mean_B$	t	df
0.8889	5.15	35

P	one-tailed	<.0001
	two-tailed	<.0001

Chapter Five: Conclusions and Recommendations

The nation's renewed emphasis on writing instruction, which came about as a result of the National Commission's report entitled *"The Neglected R,"* has caused many teachers to reassess their current instructional approaches. Because many students entering high school are functioning at low literacy levels, teachers must employ effective writing strategies. Though many strategies exist, current research in writing instruction suggests that placing individual learners at the center of instruction is necessary for academic growth. This student-centered approach is supported by Sternberg's triarchic theory of intelligence, which purports that individuals acquire knowledge in more than one mode and that optimal learning occurs when an individual encounters new ideas in his or her preferred intelligence. Given that classrooms are composed of various learners with varying learning abilities and deficiencies, it seems logical that utilizing Sternberg's instructional approach, which allows developing writers to capitalize on their strengths, would yield favorable results. This study, which sought to investigate the effects of triarchically designed writing prompts, yielded relevant information about writing instruction.

Though the data revealed that the implementation of triarchically designed writing prompt had no overall significant impact upon students' abilities to elaborate/support their thoughts in an expository essay, 39% of the participants did show some amount of growth. Of this group, 36% were identified as either practical or creative learners. This finding seems to suggest that the "matching" of intelligence preferences and writing prompts was beneficial for some creative and practical learners.

Similarly, the data revealed that the implementation of differentiated writing prompts yielded no overall significant gains on students' abilities to organize their writing. A closer look at the individual scores, however, showed that 31% of the participants showed growth, all of whom were identified as either practically or creatively intelligent. Again, it is quite possible that these participants benefited from the differentiated prompt rather than from some other variable.

The significant drop in students' abilities to establish and maintain focus on the differentiated prompt has important implications for the construction of differentiated writing prompts. The participants in this study had little practice with "tailored" prompts designed especially for their individual learning preferences; likewise, the teacher had little practice constructing creative and practical writing prompts. This combined lack of experience with differentiated writing prompts may have been a factor in the low scores. If this study is replicated, the designer of the writing prompts should refer to various prompts which solicit responses that are rooted in the practical and creative facets of intelligence.

Another modification that must be considered if this study is to be replicated is the use of a measuring instrument that is subject specific and determines individual intelligence preferences for only one identified subject area. The adapted STAT inventory, which was used in this study, is flawed in that it is not subject specific. Rather than measuring intelligence preferences in terms of writing, reading, and other language arts components, the adapted STAT measures intelligence preferences in general and includes other subject matter like math, science, and history. Consequently, thirty-three percent of the participants were identified as having two intelligence preferences. This

made it difficult to determine which differentiated prompt would be assigned to these students. It is highly possible that these students were not operating in their true mode of intelligence preference. This possible mismatching may have influenced the results of the study.

A final recommendation for those wishing to replicate this study concerns the scoring process. The essays in this study were scored using a standardized rubric, which was assumed reliable since it used by North Carolina to determine tenth grade students' writing proficiency. To ensure accuracy, the investigator utilized the state's online scoring tutorial, which provides several models and tips for scoring. To further ensure testing reliability, the investigator should employ other scorers prior to beginning the study. This extra precaution would be beneficial in interpreting outcomes.

Though the numerical data of this investigation did not yield overwhelmingly favorable results, one aspect of Sternberg's theory and current writing research is supported by this study – educators must *routinely vary* instructional approaches. Sternberg's warning entails, "… systematically varying teaching *and assessment* (emphasis added) methods to reach every student…"(1994). The fact that the overall scores were lower after the implementation of the differentiated prompts suggests that students are not accustomed to responding to anything other than the traditional analytical writing prompt. Outside the world of standardized testing, individuals will undoubtedly be called upon to employ other reasoning processes. To ensure success in the real world, educators should offer students a variety of opportunities.

Works Cited

Conrey, Sean M. (2002). *Glossary of Terms: Expository Writing*. http://web.ics. purdue.edu/~conreys/Sternberg, R. J. (1997). Thinking styles. New York: Cambridge University Press.

Damashek, Richard. (2003). "Six Step Process to Helping Students Produce Quality Writing." Educational Resources Information Center.

Gardner, H. (1983). Frames of Mind: The theory of Multiple Intelligences. New York: Basic Books.

Graham, S. and Harris, K. R. (1994). Implications on constructivism for Teaching Writing to Students with Special Needs. Journal of Special Education. 28, 275-289.

Graham, S. and Harris, K. R. (1997). *In Can Be Taught, But It Does Not Happen Naturally: Myths and Realities in Writing Instruction*. The School Psychology Review v 26 no3 p414-424.

Kern, Diane; Wendy Andre, Rebecca Schilke, James Barton, and Margaret Conn Mcguire (2003). *Less is More: Preparing Students for State Writing Assessments*. The Reading Teacher 56 no8 816-26.

National Council of Teachers of English. (2004). *NCTE Beliefs about the Teaching of Writing*. Available at http://www.ncte.org/about/over/positions/ category/write/118876.htm.

Sternberg, R.J. (1985). Beyond I.Q.: A Triarchic Theory of Human Intelligence. New York: Cambridge University Press.

Sternberg, R. J. (1995). *A Triarchic Approach to Giftedness* (Research Monograph 95126). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Sternberg, R.J. (1997). *Triarchic View of Giftedness: Theory and Practice*. In N. Coleangelo & G. A. Davis (Eds.), *Handbook of Gifted Education.* (pp. 43-53) Boston, MA: Allyn and Bacon.

Sternberg, R.J. and Grigorenko, Elena L. (1998). *Teaching Triarchically Improves School Achievement*. American Psychological Association v90 (3) p 374-384.

Sternberg, R.J. and Grigorenko, Elena L. (2001). *Practical Intelligence and the Principle*. Yale University: Publication Series No.2.

The National Commission on Writing. (2003). *"The Neglected R: The Need for a Writing Revolution."* http://www.writingcommission.org/prod_downloads/writingcom/neglectedr.pdf.

Thomas, A., Thorne, G., and Small, B. (2000). *Hot & Successful Intelligence*. Center for Development and Learning. Available at http://www.cdl.org/resource-library/articles/hot_and_successful.php.

Thorne, Glenda. (2005). What *Are Some Problems with Memory?* Center for Development and Learning. Available at http://www.cdl.org/resource-library/articles/memory_pt2.php.

Appendix A: North Carolina Content Scoring Rubric

points	Description
4	· Topic/subject is clear, though it may or may not be explicitly stated · Maintains focus on topic/subject throughout the response · Organizational structure establishes relationships between and among ideas and/or events · Consists of a logical progression of ideas and/or events and is unified and complete · Support and elaboration are related to and supportive of the topic/subject · Consists of specific, developed details · Exhibits skillful use of vocabulary that is precise and purposeful · Demonstrates skillful use of sentence fluency
3	· Topic/subject is generally clear, though it may or may not be explicitly stated · May exhibit minor lapses in focus on topic/subject · Organizational structure establishes relationships between and among ideas and/or events, although minor lapses may be present · Consists of a logical progression of ideas and/or events and is reasonably complete, although minor lapses may be present · Support and elaboration may have minor weaknesses in relatedness to and support of the topic/subject · Consists of some specific details · Exhibits reasonable use of vocabulary that is precise and purposeful · Demonstrates reasonable use of sentence fluency

2	· Topic/subject may be vague · May lose or may exhibit major lapses in focus on topic/subject · Organizational structure may establish little relationship between and among ideas and/or events · May have major lapses in the logical progression of ideas and/or events and is minimally complete · Support and elaboration may have major weaknesses in relatedness to and support of the topic/subject · Consists of general and/or undeveloped details, which may be presented in a list-like fashion · Exhibits minimal use of vocabulary that is precise and purposeful · Demonstrates minimal use of sentence fluency
1	· Topic/subject is unclear or confusing · May fail to establish focus on topic/subject · Organizational structure may not establish connection between and among ideas and/or events · May consist of ideas and/or events that are presented in a random fashion and is incomplete or confusing · Support and elaboration attempts to support the topic/subject but may be unrelated or confusing · Consists of sparse details · Lacks use of vocabulary that is precise and purposeful · May not demonstrate sentence fluency
NS	· This code may be used for compositions that are entirely illegible or otherwise unscorable: blank responses, responses written in a foreign language, restatements of the prompt, and responses that are off-topic or incoherent.

Personal Essay: Friendship/Conflict

Teacher Name: **Mrs. Hester**

Student Name: _____

	CATEGORY	4	3	2	1
	Topic/Subject	Topic/subject is clear, though it may or may not be explicitly stated.	Topic/subject is generally clear, though it may or may not be explicitly stated	Topic/ subject may be vague	Topic/subject is unclear or confusing.
Tested writing component	**Focus**	Maintains focus on topic throughout the response	May exhibit minor lapses in focus on subject	May lose or exhibit major lapses in focus on topic	May fail to establish focus on topic
Tested writing component	**Organization**	Organizational structure establishes relationships between and among ideas and/or events	Organizational structure establishes relationships between or among ideas and/or events, although minor lapses may be present	Organizational structure may establish little relationship between and among ideas and/or events and is minimally complete	Organizational structure may not establish connection between and among ideas and/or events
	Coherent / Logical	Consists of a logical progression of ideas an/or events and is unified and complete	Consists of a logical progression of ideas an/or events and is reasonably complete, although minor lapses may be present	May have major lapses in the logical progression of ideas an/or events and is minimally complete	May consist of ideas and/or events that are presented in a random fashion and is incomplete or confusing.
Tested writing component	**Support / elaboration**	Support and elaboration are related to and supportive of the topic; consists of specific, developed details	Support and elaboration may have minor weaknesses in relatedness to and support of the topic/subject; consists of some specific details	Support and elaboration may have major weaknesses in relatedness to and support of the topic/subject ; consists of general and/or undeveloped details, which may be presented in a list-like fashion	Support and elaboration attempts to support the topic by may be unrelated or confusing ; consists of sparse details
	Word choice/ Diction	Exhibits skillful use of vocabulary that is precise and purposeful	Exhibits reasonable use of vocabulary that is precise and purposeful	Exhibits minimal use of vocabulary that is precise and purposeful	Lacks use of vocabulary that is precise and purposeful
	Sentence fluency	Demonstrates skillful use of sentence fluency	Demonstrates reasonable use of sentence fluency	Demonstrates minimal use of sentence fluency	May not demonstrate sentence fluency

Appendix C: Data Table

Writing Feature: Focus

count	X_a	X_b	X_a - X_b
1	3	3	0
2	4	3	1
3	4	3	1
4	4	2	2
5	4	2	2
6	4	2	2
7	4	2	2
8	4	3	1
9	4	3	1
10	4	3	1
11	4	2	2
12	3	3	0
13	4	1	3
14	4	2	2
15	4	3	1
16	3	3	0
17	4	4	0
18	1	1	0
19	3	2	1
20	4	2	2
21	4	3	1
22	3	1	2
23	2	1	1
24	1	2	-1
25	2	4	-2
26	3	3	0
27	4	3	1
28	4	3	1
29	1	1	0
30	2	3	-1
31	4	3	1
32	3	1	2
33	4	3	1
34	4	3	1
35	4	4	0
36	4	3	1

Appendix D: Data Table

Writing Feature: Support / Elaboration

count	X_a	X_b	$X_a - X_b$
1	3	3	0
2	3	3	0
3	3	2	1
4	2	2	0
5	3	2	1
6	3	2	1
7	3	2	1
8	3	2	1
9	3	1	2
10	2	2	0
11	4	2	2
12	1	2	-1
13	2	3	-1
14	3	2	1
15	3	2	1
16	3	3	0
17	3	3	0
18	2	2	0
19	2	3	-1
20	3	3	0
21	3	3	0
22	2	2	0
23	3	3	0
24	1	3	-2
25	2	3	-1
26	3	3	0
27	3	3	0
28	3	3	0
29	2	1	1
30	2	3	-1
31	2	3	-1
32	3	2	1
33	2	3	-1
34	4	3	1
35	3	3	0
36	3	3	0

Appendix E Data Table

Writing Feature: Organization

count	X_a	X_b	$X_a - X_b$
1	3	3	0
2	4	3	1
3	4	3	1
4	4	3	1
5	3	3	0
6	2	2	0
7	4	2	2
8	4	1	3
9	3	1	2
10	1	3	-2
11	4	2	2
12	2	3	-1
13	1	2	-1
14	2	1	1
15	4	3	1
16	2	2	0
17	4	3	1
18	1	2	-1
19	3	2	1
20	2	2	0
21	4	4	0
22	2	1	1
23	2	2	0
24	1	3	-2
25	1	4	-3
26	2	3	-1
27	4	3	1
28	3	2	1
29	1	1	0
30	1	3	-2
31	2	3	-1
32	2	3	-1
33	2	4	-2
34	4	4	0
35	4	4	0
36	4	3	1

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